

The Unreasonable Effectiveness of Mathematics in Physics



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**Room 206, 1st Lecture Bldg.
(Online via Zoom)**



The relationship between physics and mathematics has a long and deeply intertwined history. Many important phenomena in physics can be understood through simple yet powerful mathematical structures, and this interplay continues to open new ways of understanding the natural world.

In this introductory seminar, we will explore several physical phenomena from the perspective of symmetry, geometry, and topology. The topics will include examples from classical mechanics, quantum mechanics, special relativity, and general relativity, such as the harmonic oscillator, quantum spin, Lorentz transformations, and black holes. Through these examples, we will see how simple mathematics can illuminate concrete physical systems.

The seminar aims to give students a glimpse of interesting mathematics in physics, and to convey how fascinating the interaction between the two subjects can be.

**This seminar is open to all students.
Please contact us by email for the Zoom link.**

